



# ESSEX

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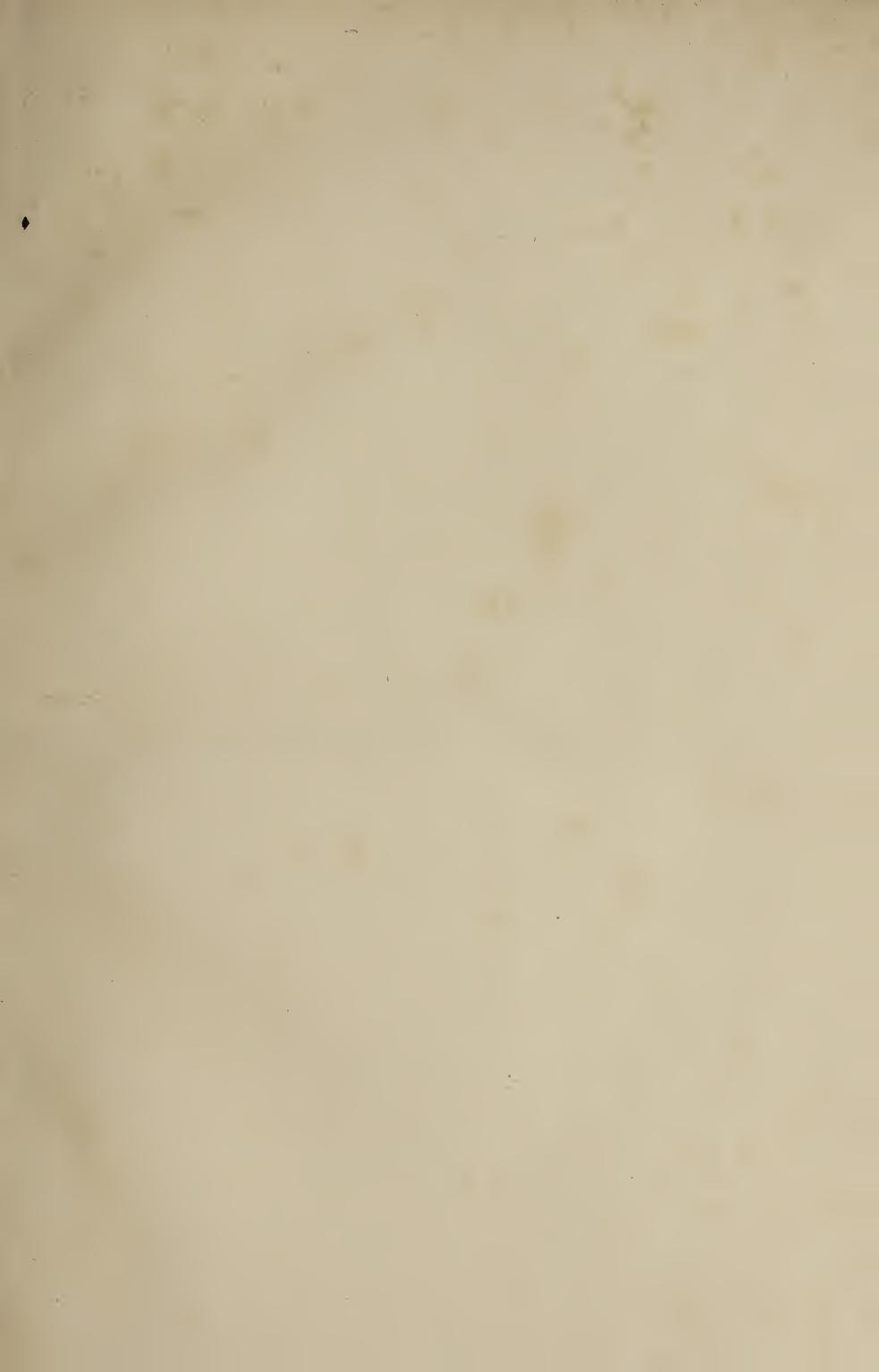
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# ADDRESS

DELIVERED BEFORE THE

# ESSEX INSTITUTE

ON THE

SEMI-CENTENNIAL ANNIVERSARY

OF THE FORMATION OF THE

### ESSEX HISTORICAL SOCIETY.

By ABNER C. GOODELL, JR.

SALEM.

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CATALOGIED



## ADDRESS.

MR. PRESIDENT, MEMBERS AND FRIENDS, OF THE ESSEX INSTITUTE:—

The commemoration of the fiftieth anniversary of the founding of the Essex Historical Society, from which, by a union with the Essex County Natural History Society—started some twelve years later—the Essex Institute was formed, naturally suggests, as a theme befitting the occasion, a consideration of the interdependence of History and the other Sciences.

All the steps in the formation and union of these societies have been so often traced, and the character and influence of the members of the first of them, especially, so fully and graphically described, in addresses and publications by and before the Institute, that you will hardly expect from me a fresh treatment of a topic so familiar. Indeed, the echoes of Mr. Upham's memorial address on the lately deceased President of the Institute, in which he has left nothing further to be said upon this subject, have scarcely died away. You all remember his description of the literary character of this community before the

Revolution; of the formation of the Social Library in 1760; and his list of names of those gentlemen of culture whose learned conversations, in places of public resort, or over Mr. Appleton's counter, did much, perhaps, to mould the habits of thought and inform the mind of Benjamin Thompson, the young Salem apprentice, who, later in life, was the first to demonstrate, experimentally, what Faraday has declared to be "the highest law in physical science which our faculties permit us to perceive"—the conservation and correlation of forces. Nor can you have forgotten how strikingly our associate exhibited the attainments of that group of scholars and men of science, who, fifty years ago to-day, resolved upon the formation, in this place, of a society devoted to civil and natural history.

It needed not his eloquence, surely, to quicken our pride at the recollection of those great names. Story, who presided at the first meeting, now recognized alike in Westminster Hall, at Heidelberg, at Paris, and in our own courts, as a leading expounder of some of the most intricate problems of jurisprudence; Bowditch, not only the translator, but the interpreter, of the profound calculations of La Place, in celestial mechanics; and White and Pickering who, in the most scholarly and faithful manner, jointly prepared the first American critical edition of Sallust, and the latter of whom has given to us, as one of the results of his extensive philological studies, the first Greek and English Lexicon,—are names worthy to grace the rolls of any society of learned men. Nor

are their less conspicuous associates and successors to be overlooked or forgotten. To say, merely, that they were men of rare accomplishments is to fail, as Mr. Upham has shown, in sufficiently recognizing their important contributions to the education and refinement of society about them, and to the advancement of science.

Leaving, then, the history of the origin and growth of this society as a task already well accomplished, let us pursue the theme at first proposed.

A brief comparison of some salient features of everyday life, now, and fifty years ago, will serve, appositely, I think, to illustrate my argument.

No doubt the American citizen of 1821 felicitated himself that he was born in an age so auspicious. For more than a generation American Independence had been an accomplished fact. The recent provess of our navy, in conflict with the first and bravest maritime power in the world, had fanned the flame of patriotic pride not less than had the achievements of Franklin in science, and the success of our statesmen in constitutional law and diplomacy; and the hopes of stability and progress for the Republic were well assured. The telescope was an old invention, and the microscope had been used here more than a century. Gunpowder, the mariner's compass, the art of printing, the astronomy of Copernicus, knowledge of the law of gravitation, the use of logarithms, true principles of chemistry, the circumnavigation of the globe, - and great additions to our stock of geographical knowledge, - improvements in the art of navigation, the extension of commerce, the solution of important problems of trade, the discovery of the circulation of the blood, and vaccination, the construction of turnpikes and improved roads, and the commencement of the application of steam to fixed machinery and to locomotion, were all actual achievements, which seemed to complete the long progress of civilization and to render all hopes of a greater future illusory and vain.

Yet, viewed from our present stand-point, even then, how much of physical comfort and luxury was unknown, and how insufficiently were the higher wants of our nature supplied!

There were, then, no furnaces to warm our dwellinghouses and our public halls; no anthracite coal in grate or stove; no gas to illuminate our streets and buildings; the ordinary table fare—in fruits and vegetables, especially—lacked variety and delicacy; furniture was simply-contrived and expensive; and clothing was so dear and wardrobes so meagre, among the masses, as not only to limit the gratification of taste in dress, but to have produced intolerable inconvenience, had the modern notions respecting personal cleanliness generally prevailed. For amusements, our people were contented with the feats of the strolling juggler, occasional shows of a few wild animals, theatrical performances in our larger cities, assemblies, dinner-parties, singing-schools, and the parades of the militia. Our gardens, then as now, the source of the purest and healthiest delight, were neither numerous nor large. They seldom contained more than a single

variety of the peony, three or four varieties of the tulip, as many, perhaps, of bush-roses and pinks, lilies, holly-hocks, balsams, daffodils, lilacs, marigolds, poppies and a small company of less conspicuous flowers, mostly annuals.

There were then no courses of public lectures, no illustrated magazines and newspapers,—indeed, what newspapers there were, were mainly filled with local and political controversial articles, bitter, personal attacks, and heavy, stilted disquisitions on matters of small importance. The reviewers and scientific journalists had, it is true, begun their labors, but they wrote for a limited circle of scholars and thinkers, and depended upon their pecuniary, as well as intellectual, aid for existence. There were then no free schools for girls,\* no English high schools for boys, and no normal schools for either sex. Railroads had not then superseded stage-coaches, and the electric telegraph was not dreamed of. American art was scarcely known; and our few larger libraries were defective, poorly arranged and not easily accessible.

What a contrast to this picture does our present condition afford! — when the telegraph brings us almost hourly

<sup>\*</sup>This statement may require some qualification. In the country, children of both sexes generally attended the same schools, which were not graded; but, usually, in the larger towns, the girls were only permitted to attend, for recitation, after the boys were dismissed. In Boston, as I am informed by Mr. Philbrick, the accomplished superintendent of schools, no provision was made for the free instruction of girls until 1789, when they were permitted to attend the grammar-schools for half the year. Upon the establishment of primary schools, in 1818, pupils of both sexes were admitted; but it was not until 1828 that girls were allowed to attend the grammar-schools during the whole school year.

intelligence from Paris and San Francisco, and informs our merchants of the arrival of their ships in Arabia on the same day—promising, presently, to more than fulfil the extravagant engagement of Puck to—

"—put a girdle round about the earth in forty minutes;"

when our railroads stretch across continents, and exchange the produce of the Zones without transhipment; when the steamship, like a shuttle, weaves the strong web of amity and common interest between the opposite shores of oceans; when newspapers convey to every family daily intelligence from all lands, and upon all subjects; when exhibitions of the highest mechanical skill and galleries of art are opened to the public, and our best schools and libraries are free; when, in short, the common laborer has the means of being better fed, clad, amused and instructed than the most favored citizen could have been two generations ago, and, if he chooses, can live a larger life, with more solid enjoyment, than wealth could then purchase or royalty command. Nor is this all: the increase of knowledge and more complete dominion over nature have been accompanied by the amelioration of laws and manners, and a larger measure of national liberty; feudal customs have become extinct; systems of involuntary servitude have been abolished; the rights of individuals, including freedom of thought and of speech, in a great measure, established not only here but all over the civilized world; and the thoughts of leading minds, in all pursuits, rationally directed to the great problems of life and destiny, and the earnest consideration of how the welfare of mankind may be best promoted.

To the question "To what are we indebted for all this improvement?" there is but one final and sufficient answer; and that is, simply, The Progress Of Science. This Protean actor has played new parts throughout the The venerable science of Astronomy whole cyclopædia. has, during the last half-century, been advanced by improvements in the finish and machinery of the telescope; and, besides the discovery of many asteroids and comets, and the calculation of their orbits, the world has, in that period, witnessed, in the discovery of the planet Neptune, an unprecedented triumph of science. Herschel's discovery of Uranus was accidental; but the calculation by which Le Verrier fixed the position and revealed the presence of Neptune, is an illustration of the perfection, and the wonderful prophetic power, which this grand science has attained—a science the systematic prosecution of which in this country, dates hardly further back than the year 1843.

Besides the telescope, two other great aids to man's natural powers of observation are the products of the last half-century; I refer to the improved microscope, and the spectroscope. To the perfection of the former, we are indebted for the resolution of many obscure points in physiology, and the discovery and classification of a vast number of curious phenomena in crystallography, and in the lower and more minute forms of organic life; while the latter has afforded to chemistry a test incon-

ceivably delicate and sure, and to astronomy a positive answer to questions which, but a few years ago, seemed hopelessly beyond the province of actual knowledge.

Chemistry has, during the same period, performed for the arts the most valuable services. It has created the art of photography, and conveniently supplied to pharmacy many valuable remedies. By its new and powerful explosive agents it has enabled man to quickly penetrate and remove the hardest and most formidable natural barriers, and, by its improved processes in metallurgy, it has helped to people regions hitherto uninhabited, largely increased the supply of coin, and proclaimed the opening of the age of steel. Electricity has been made to operate the telegraph, and to reduce the cost, and accelerate the process, of printing; and the discovery of the anæsthetic properties of ether and chloroform has greatly lessened human suffering.

Cuvier had publicly laid the foundation of modern zoölogy only four years before the event we now commemorate; and since that date the natural system in botany has become firmly established. Within fifty years geology and palæontology have triumphed over obstinate prejudices and formidable opposition, and archæology has risen to the dignity of a true science. Linguistic science dates its origin from the writings of Bopp, on comparative philology, which were first published in 1827; and ethnology is just starting upon a new career.

This is but an imperfect sketch of some of the recent achievements of science; and when we consider only the more immediate results of these and other discoveries and improvements, in their application to the practical needs and purposes of life, we can hardly fail to ascribe to its legitimate cause the corresponding advance of civilization, and shall clearly perceive that the relations of science to history are intimate and important.

Indeed, history which fails to recognize the active agency of science in the affairs of men and nations, nay, which is not penetrated and guided by this idea, ceases to be history and becomes either mere speculation, or, what Bolingbroke characterized another superficial kind of narrative, "a dry register of useless anecdotes."

The interdependence of the natural and physical sciences is plainly evident. How closely related, for instance, are mathematics and optics to astronomy, paleontology to recent zoölogy, comparative philology to ethnology, and spectrum analysis to chemistry and astronomy. To chemistry even the fine arts are indebted for photography, which has created the pre-Raphaelite school of painters, as defined by Ruskin, with all their fidelity to nature, their delicacy, and freedom from exaggeration and false luxuriance of style.

In like manner, the closest relations subsist between geology, paleontology, archeology and philology on the one hand, and history on the other. Indeed, what are these sciences but histories of the period unknown to tradition and prior to the invention of letters? The great questions, now agitated by the scientific world, respecting the origin and primitive state of mankind, are as im-

portant to the historian as to the zoologist; and whether the arguments of later investigators in this field are sustained or refuted, the experimental facts they have gathered and attested, must carry us a great way toward the ultimate truth respecting the beginnings of human existence, and the history of our savage progenitors in their earliest and lowest condition.

The science of human physiology, too, has a direct bearing upon history. It helps the historian to avoid errors into which he is liable to be drawn, by the force of dominant ideas, and teaches him when to suspect illusion in others. Mental epidemics, sectional and national animosities, the antipathies of races and castes, and other causes of sudden and general motions in the social and political state — oftentimes of momentous consequence — cannot be properly characterized or explained, without the aid which physiological and ethnological science afford.

Let us not confound the history of science, with history written upon a scientific basis, and guided by correct observation and appreciation of those intimate and profound relations of things and events, which science discloses. History has been well said to be philosophy teaching by examples: it is, not less truly, science applied to the progress of human events. The historian who undertakes not only to recount, but to interpret events, should collate, study, and digest his data with the same care, diligence and freedom from prepossession, that the most careful man of science would deem necessary in the pursuit of his specialty. His conclusions should be in-

ductions; and, moreover, he should so test his observations and deductions, both with reference to his own possible misapprehension, and to the weight and credibility of evidence, as to exclude, in anything he may affirm, all chances of error from distorted or partial views or sheer delusion.

A single instance in point may illustrate my meaning. Probably, the most interesting and important phenomena of psychology have been exhibited, in this country and in Europe, within the last twenty-four years, in what are called "the manifestations of spiritualism." Rightly understood these phenomena, it would seem, offer a key to almost all the spiritual mysteries of former times; and nothing, of a similar nature, in history is better supported by human testimony, whether we regard the nearness of the events, or the number, character and sincerity of the witnesses; yet, by applying to these phenomena the rigid tests which science prescribes, the historian is obliged, in spite of the earnest protests of a multitude of believers, to exclude all the alleged phenomena which exceed or conflict with well-established scientific laws, from his list of proved and admitted facts; and, for the present, at least, they, necessarily, take their place, in history, as subjective impressions and not as objective realities.

The use of statistics affords an example of a purely scientific method applied to history; and it was a true saying of Schlözer, the pupil of the founder of this science, that "statistics is history at a stand; history is statistics in a state of progression." The importance of statistics

to political economy is now practically acknowledged the world over; and census-returns and public registers are prepared by all civilized governments in such a manner as to be easily digested into tables adapted to show the comparative condition of society, in the most important particulars, at different periods. Carried still further, this science could be made vastly more serviceable, not only in solving problems in political economy, but in measuring the progress of ideas, faiths and other mental phenomena, changes of manners and customs, and, generally, in contributing to the history of civilization. Indeed, there seems to be no surer basis for sound induction and generalization, in all matters relating to the progress of human events; and, simply, because the method pursued is purely scientific.

If it is true, then, that history is dependent upon science for its only proper method, its tests and many of its most interesting facts, it is not less true that science is indebted to history for its preservation and expansion. As printing is the art preservative of arts, so is history the science preservative of sciences. Science cannot exist in isolated phenomena; it requires condition, comparison, relation or combination; there must be the copula and predicate as well as the subject; and these denote an historical fact, even if they be presented simultaneously.

By history, alone, can science exhibit the order and procession of discovery; and, like a child to its nurse, must it look to history to learn its age and the story of its growth. Every part of science which is not learned

by original discovery is learned from history, no matter what name the record assumes, or in what guise it appears. All the known laws and data of established science are historical facts; and the story of Galvani and the frog, or of Newton and the apple, and the discoveries to which these incidents led, are as truly historical as the assassination of Cæsar, or the surrender of Cornwallis at Yorktown.

The historian's art is indispensable to the man of science in all his larger generalizations; since only by this means can the higher laws of relation and tendency be discerned; and a master of science should never think of his specialty but with reference to the succession of observations and discoveries which have accumulated until they have gained for it a place in the circle of the sciences. Your best scientific treatises are strictly historical, albeit their chronology may be brief and the events few.

Finally, the whole tendency of modern philosophy constrains us to believe that history and science, conjointly, have a nobler work to accomplish than the world has yet witnessed; and that is, to solve the problem of the great end of human existence, to furnish a positive test of good and evil, and to define the nature, indicate the course, and demonstrate the obligations of duty. It is a lamentable fact that the world, even the Christian world, is not yet agreed upon a system of ethics. The philosophy of morals is at best essentially dogmatic, or the creature of speculations—profound, perhaps, often wise, and always well-meaning; but still very far removed from the certainty of scientific induction. I do not attempt to say what the

true system is, nor whether its discoverer and expounder has appeared; but I firmly believe that we are not always to grope through an—

"--- infinite, dark, and fathomless abyss,"

but that science and history, mutually acting, are, some day, to unfold to us a system of moral philosophy built upon positive foundations and commanding universal assent; so that the solution of ethical questions may be made with the regularity and certainty of mathematics.

History cannot take its first step, nor philosophy exist, without some theory of human duty constantly in view. It may be purely speculative, or it may be accepted upon authority; but the recognition of some system is implied in the very idea of history or philosophy. Yet what widely different theories of right have been adopted by historians and parties in all ages! In English history, for instance, is it settled what picture we shall accept as genuine of Henry VIII, Mary of Scotland, Mary of England, Elizabeth, Charles I, Cromwell and the Within the last fifty years what utterly Puritans? diverse conclusions have been arrived at respecting the admitted facts of the careers of the first and the third Napoleons; and what totally opposite ideas of morality have been advanced and sedulously maintained in the terrible controversies — now happily ended — concerning American Slavery! What umpire shall decide for us? What test shall, in future, be applied to redeem history from the reproach of empiricism and uncertainty?

The conviction that such conflicts must be reconciled; that error springs from partial views; that all truth is consistent in the aggregate and in all its parts; that a uniform law pervades and characterizes all the motions of life, referring them to some great, ultimate purpose; and that this law has been revealed, partially and by glimpses, to the expounders of all systems, — has drawn modern philosophy to adopt the method of history, by which she hopes to detect this law, and trace it to its end; or, oftener, assuming that she has discovered it, she resorts to history to vindicate her right of discovery, and to show how this continuous line of truth, extending through all philosophical systems, has developed, at last, into harmonious perfection in the particular system proposed. If, with the historical method, she combines the inductive processes of science, and limits herself to the study of experimental truth — distinguishing between mental impressions and real phenomena — she will make, let us believe, if not as high excursions, a more certain progress toward the desired goal, which it would be distrusting Providence to believe is not attainable.

Here let us revert to the event we commemorate, and consider the proofs of their wisdom who founded, in the joint interests of history and science, the society out of which this Institute has sprung.

What then existed only in an act of incorporation and a name, now offers for public use, in this large and commodious building, a library of twenty-six thousand bound volumes, more than one hundred thousand pamphlets, and two thousand five hundred volumes of newspapers, bound and unbound, including duplicates.

On the other side of the library hall, the Athenaum displays nearly fourteen thousand volumes more, in every department of literature.

Our publications embrace the three numbers of the Journal of the Natural History Society, six volumes of Proceedings, ten volumes of Historical Collections, and an eleventh volume already begun. To these must be added—besides some occasional publications—two volumes of the "Monthly Bulletin" and five volumes of the "Naturalist."

These publications have been well circulated and have received merited attention at home and abroad. The "Naturalist," especially, which is now published under the auspices of the Peabody Academy of Science, has been, without exception, most favorably noticed by scientific and literary critics here and in Europe.

Our cabinets, in 1866, contained about fifty-five thousand classified specimens in the various branches of natural history. These and other specimens not then arranged have been united with those in the East India Marine Hall, and they, together, number several hundreds of thousands. These united collections the Peabody Academy of Science has in charge; but they are available for use to members of the Institute, and all other students of science, on the most liberal terms.

In numismatics, ethnological specimens, and manuscripts our collections are considerable; and the fine arts,

embraced, by the recent amendment to our act of incorporation, among the objects of the Institute, are beginning to receive special attention—particularly the art of music.

The public have always been invited to participate in our studies, and enjoy the advantages which the Institute offers, upon almost equal terms with its members; and while the State has had the use of the rare collection of the Province laws in our library, our cabinets have furnished nearly all the typical specimens — from which one of our associates has made the drawings—used in the preparation of the recent work on the invertebrates of Massachusetts, published by authority of the Commonwealth.

Finally, we have established a printing-office, which, though not now connected with the Institute, continues to perform all our typographical work in a style not excelled by any other press in the country.

All this, and much more, has been the result of gradual and quiet growth. No Mæcenas has showered his golden bounty upon us, nor have we received the largesses of the State; but by slow and silent processes, under wise and prudent direction, those who are most to be benefited by such an institution,—the people—drawn by the various attractions which are embraced by its constitution, have built it up, rendered it symmetrical, and enlarged and strengthened its foundations.

Throughout our career we have had no jealousies, no divisions, no conflicts; but science and literature have gone hand in hand to prove that wisdom's "ways are ways

of pleasantness and all her paths are peace." There has not even been a generous rivalry between the workers in the different departments of learning who have labored here, side by side, in a common cause. To adopt the words which were lately applied to our oldest university by its President, in his admirable inaugural address, the Institute "recognizes no real antagonism between literature and science:" nay, we go further; we claim to have shown that the true interests of both are identical, and their success mutually dependent.

As the representative of the historical department of the Institute, I am proud to attest to the joy with which we all received the announcement of the munificent provision of Mr. Peabody, for the promotion of science in this county, through the instrumentality of those devoted, hard-working, young men who composed the scientific side of this body; and, I certainly utter the sentiments of the Institute, as a whole, when I, also, express our sense of the immeasurable obligations we are under to the great disciple of Cuvier, who, for half the period we are to-day looking back upon, has been disseminating a knowledge of the correct principles of natural science in this, the land of his adoption, and to whom his pupils, our associates, are so much indebted for the methods of observation and reflection by which they have won an enviable fame; for their knowledge of, and interest in, the progress of their European collaborators; and for their unfaltering, enthusiastic devotion to science through years of discouragement, toil, trial and sacrifice.

Lovers of history and antiquities are, it is commonly

thought, habitually conservative. Constant retrospection is apt to beget undue regard for the past and aversion and distrust of novelties. Science, on the other hand, is, to its votaries, nothing if not new. Yet here, where these different dispositions are certainly as strongly marked as in any other body, no offence has been given and no discord ensued. Our connection with our scientific associates has made us so familiar with the great truths of nature, which it is their province to seek out and elucidate, that we are no longer startled by the free discussion of those phenomena which have led men of science, everywhere, to modify their interpretation of, or assent to, the Mosaic cosmogony, and to reject the chronology of Newton. We do not hesitate to follow science in condemning as visionary many notions generally received as truths fifty years ago; and some theories then entertained appear to us now as absurd as the cycles and epicycles of Ptolemy.

Yet the effect of scientific progress has been not to abate our reverence, but, by extending the limits of actual knowledge, to exalt our ideas of the greatness, harmony, minute economy, and regularity of Creative Power; and, by depriving them of all appearance of finite and material qualities, to render more venerable the mysterious objects of faith.

If I should attempt to portray the results of the education which this miniature university, with its democratic organization, its wide range of pursuits, and its free and healthy discipline, is calculated to bestow, I should

show you a mind many-sided; intensely curious as to all the phenomena of nature and all the concerns of life; exact and complete in what it professes to know; ready to receive any and all truth, yet not rashly venturing upon experiments, nor given to drawing conclusions from uncertain premises; as far removed from envy and covetous ambition, as from indifference to anything that concerns the welfare and happiness of mankind; large of comprehension yet laborious and exact in details; knowing no science, no phenomenon of mind or matter unworthy of study, and holding sacred every law of nature; ever industrious in the serious avocations of life, yet ever contriving how to make them pleasurable and recreative; intent on gathering and treasuring the relics of the past because of their possible interest and value for the future; the associate and counsellor of age, and the friend and genial companion of youth; aiding, both by precept and example, to interest all others in its own special work, and taking an equal interest in the pursuits of others; above all, disturbed by no fears that coming generations will undo the work of to-day, or that the mass of our fellow men may not be trusted to work out their own destiny in the best possible manner; and looking, for the conservation of truth, to the general intelligence of mankind rather than to edifices and institutions erected and maintained by the few.

Brothers and Sisters: — If, in the picture I present, you discern the lineaments of one still living — and long

may he be spared to us — in whom the Institute may be said, reverently and truly, to have lived and moved and had its being - that "guide, philosopher and friend" to whom the whole community, and we in particular, are so deeply indebted; who, with rare industry, and utter suppression of self, for more than a generation, has devoted to the upbuilding of this institution his time, learning, talents and all his energies; whom ambition has not allured from his chosen path of duty, nor bereavements secluded;—consider, that the likeness is but another illustration of the invariable relations of cause and effect, that the school must take its cast from the genius of its founder; and that the only return which it is possible for us to make him, and that he will accept, is so to imitate his example that this our "gentle mother," may have sons and daughters able and worthy to take up and carry on the work which he shall leave undone.







